THE INCIDENCE OF COMPULSORY INSURANCE OF WORKMEN

I

In contemporary discussions of workmen's compensation laws much is heard regarding the ultimate incidence of the burden of the insurance premiums. The most common conclusion seems to be that this burden rests ultimately on the consumers of the goods produced by the insured wage-earners.[1] The contention of this paper is, on the contrary, that the incidence of the burden is upon wage-earners as such. There is no intention to argue that the burden necessarily rests upon the particular groups or trades of wage-earners insured (if the insurance is not general) or that relative prices of goods are in no case affected. But there is an intention to assert that the burden of such insurance is shifted finally upon wage-earners as such rather than upon the receivers of interest from capital or rent from land; and there is an intention to assert that this is as true if and when insurance is required only in especially dangerous industries as it is if and when such insurance is required in all industries.

It is sometimes urged by way of argument for compulsory insurance of employees by employers, that the money paid to insurance companies or to the state in premiums for insurance is really not a burden in any considerable degree upon anyone. For, it is said, the system of compulsory compensation for employees avoids the litigation of damage suits with the consequent large fees paid to lawyers by both sides. Whether this view is well-founded or not we need not here inquire. The insurance premiums which have to be paid do, at least, cost something even if they cost no more than litigation might otherwise cost. It might be a proper question what is the ultimate incidence of the expense of

[1] Professor Taussig, however, argues that when such insurance is general, the burden is upon wage-earners, although it is not clear that he believes this to be the case when the insurance is required only in some industries. See his *Principles of Economics* (New York: Macmillan, 1911), pp. 326–27.

litigation in the absence of compulsory insurance. It is certainly a proper question what is the incidence of the insurance premiums when such insurance is required by law.

For clearness in discussing the problem at issue we may distinguish the three following cases:

1. Where the insurance has to be paid for, at some percentage of wages, by all employers of all labor.

2. Where such insurance is required only in special lines—as, for example, the more dangerous industries—and where the certainty of compensation in case of accident makes workmen willing to work for correspondingly less current wages.

3. Where such insurance is required only in special lines and where the workmen either so underestimate or so overlook the likelihood of accident or think so little about the advantages of compensation that they are not willing to work in the insured industries for less wages than if the insurance and the consequent compensation were not provided for. Let us consider these three cases in order.

II

To the student of the theory of distribution and the incidence of taxation the first of the cases ought to seem entirely simple. If and so far as it is true that employers hire workers up to the point where the difference between the product with and without an additional worker is not appreciably greater than the wages paid; and if wages in general are fixed by the demand for labor of all such employers taken along with the supply; then a payment which must be made for insurance, with each worker hired, will certainly enter into the intelligent employer's calculations.

To illustrate, suppose the marginal worker of a given grade of efficiency to be worth, in any establishment, 1,200 units of product a year. Then at wages up to approximately 1,200 units such a worker may be hired. If all available labor can be employed without reducing the marginal product of labor of this grade below 1,200, then the demand for such labor at approximately that wage will equal the supply. In that case 1,200, or not appreciably less, will be the wage-rate.

But if, for each worker hired, the employer must pay 20 as an insurance premium, then the marginal worker will not be employed at wages of 1,200 but only in case he accepts 20 less, viz., 1,180. At wages for the grade of labor in question, higher than 1,180, some labor will be unemployed, the supply of labor will exceed the demand for it. The insurance premium must be paid for each employee who is hired. The potential employer, therefore, before hiring the workman, compares the value of his services not with his prospective wages alone but with these wages plus the cost of the required insurance. And he will not knowingly employ a workman whose services are worth no more than his wages alone.[1]

The foregoing conclusion cannot be avoided by supposing that the insurance premiums are reflected in rising prices. For there is nothing in the assumed situation which can be expected to make prices higher. The payment of premiums for the insurance of employees does not increase the amount of money in the country. It does not make bank reserves larger, or banks better able to extend credit. It does not, therefore, presumably, *increase the demand* for goods and bid up prices. On the other hand, there is nothing in the requirement of compulsory insurance of employees to *decrease*, as a long-run matter, the *supply* of goods. Workmen cannot afford to remain long idle even if their wages fall by the amounts paid as premiums for their insurance. They will not, therefore, in the long run, produce appreciably less goods. The prices of goods will be raised *neither* by an increased demand *nor* by a decreased supply. The insurance premiums cannot diminish the demand for the use of capital and so reduce interest, since they are not imposed on the use of or in proportion to the amount of use of capital. They cannot diminish the demand for the use of land and so reduce rent. Their only effect must be to reduce wages. It follows that upon wage-earners, as such, must fall the ultimate burden of the payments. A tax upon all commodities or upon all sales would fall, in the last analysis, upon wage-earners, interest-receivers, and rent-receivers. If, there being no money or credit to spend for goods, labor, etc., such taxes raise the money prices of goods, then they will lower money incomes in general—

[1] Cf. Taussig, *loc. cit.*

not merely wages. Prices of consumable goods can rise, though money incomes decline, because the government, with the money received from the taxes, buys the surplus goods which citizens cannot buy. The prices of goods, including the taxes, will be higher, money incomes will be lower. So much money being paid in extra prices of goods, because of the taxes, less money can be paid to the producers of goods. Net prices—i.e., prices minus the taxes—will be somewhat lower than prices would be if there were no taxes. But net prices determine possible rentals, interest, and wages. The money values of the marginal products of land, capital, and labor are reduced. Hence, the money incomes of landowners, capitalists, and laborers are lessened. An insurance premium, however, imposed upon employers not in proportion to output or to sales but according to the number and wages of workers hired, will not raise prices in general and must fall upon wage-earners and upon wage-earners alone.[1] Wages plus premiums will equal what wages were before. The prices of goods will not be raised.

III

We have now to consider the second case, viz., where insurance of workers is required not in all but only in especially dangerous industries and trades and where the certainty of compensation in case of accident makes the wage-earners willing to work for correspondingly lower current wages. This case is surely clear enough. If the insurance against accident in these industries and trades is thus clearly conceived by workers as an advantage in so far offsetting the incident dangers, then wages in these industries and trades will ultimately be lower by just about the amount of the premiums which must be paid. Higher wages than this would diminish the demand for labor, since at higher wages the marginal man would not be worth his wages plus the insurance premium. Also, at any higher wages, under the assumed conditions regarding the attitude of workers, the insured industries would become relatively more attractive than before and supply of labor for them would exceed demand. But wages less than before by just the

[1] Note, however, qualifications toward end of article.

amount of the premiums required would, under the assumed conditions, leave as large a supply of labor for the industry as before, since the workers regard their certainty of compensation in case of injury as offsetting the reduction in the wages currently paid to them. Also, wages lower than those paid prior to the insurance requirement would mean the same total expense to employers on the marginal workers hired by them, as before, and would therefore make demand for labor the same as before. Demand and supply would therefore balance at wages lower than before by the amount of the required premiums and at these lower wages the same number of men would be hired as previously and the same volume of goods would be produced.

IV

We come now to the third case, viz., where the insurance is required only in special lines[1] and where the workers so underestimate its advantages, or pay so little attention to it, or have previously so little realized the peculiar risks to life and limb of the industries in question, that it is necessary to pay approximately as high wages after compulsory insurance is established as before in order to keep in these industries the former number of workers. This is the most difficult case to understand. Yet an analysis of it leads inevitably to the conclusion that the premiums charged for insurance operate to diminish the amount of wages received by wage-earners. In this case, however, it does not diminish, or at least does not diminish by the amount of the premiums paid, the wages in the insurance-protected industries. For if the workers in these industries previously underestimated the dangers or now underestimate the value of the insurance, it is reasonably certain that some of them (those who are marginal between these and other industries or trades) will not remain in the insurance-protected industries if their wages are made lower than before by the amount of the insurance premiums. The wages plus the newly required premiums must be higher than the wages alone were prior to the introduction of a compulsory insurance plan.

[1] Or is much heavier in some lines than in others.

Such higher expense for each employee will presumably necessitate higher prices for the product.[1] But the story does not end here. Consumers, as such, so far as they are consumers of goods-in-general and are not especially disposed to consume the particular kinds of goods raised in price by the insurance premiums, will not suffer. The higher prices of these goods will be made up for, to them, by lower prices of other goods. For the higher prices of the goods produced in such insurance-protected industries must either diminish demand for these goods or, in case of an inelastic demand leave demand approximately the same. If the latter is the situation, then consumers spend so much more money for these goods at the higher prices, that they must either buy less of other goods or secure other goods more cheaply.[2] The inevitable tendency is in the direction of economy in the purchase of other goods. These other goods must sell either at lower prices or in smaller volume. But if they sell in smaller volume, some of the persons who would be engaged in their production will be partly or wholly idle and their competition for employment will tend to bid down wages until they are occupied and until larger production lowers the prices of the goods they produce. Consumers of goods-in-general may then be compensated in the fall of these prices for the rise of the prices of the goods produced in the industries having workers' compensation.

But by so much as the amount paid for workers—including the insurance premiums—in the industries having workers' insurance is increased because of the insurance, by just so much is likely to be decreased, in the long run, the amount going to workers in other industries. The insurance is, indeed, presumably for the benefit of wage-earners and worth its cost; but whether it

[1] It is admitted, of course, that, as in the case of commodity taxes, if production is carried on under conditions of diminishing returns (i.e., increasing cost), only part of the burden of the premiums is felt in higher prices. Cf. remarks near close of article.

[2] The inability of these consumers to pay as high prices as before for other goods will not presumably be offset by larger means of purchase on the part of the recipients of the high prices (including the insurance companies). For these recipients merely get the money that the sellers of other goods would else get. There is no special reason to expect that more money is spent in the aggregate; and, therefore, if some prices are higher, others are likely to be lower.

is worth its cost or not, it is paid for out of wages. It is not paid for out of interest or rent. Doubtless in the lines in which goods fall in price not only will the salable value of the marginal produce of labor fall, but likewise the salable value, *per unit of output*,[1] of the marginal product of land will tend to fall. But correspondingly, in the lines where the cost of insurance, coupled with the impossibility of getting men to work for less in formal wages because of the insurance, makes necessary a rise in the prices of the goods turned out, this rise tends to benefit rent-receivers by affecting the salable value, *per unit of goods*,[1] of the marginal product of land in the same way in which it benefits wage-earners by affecting the salable value of the marginal product of labor.[2] If, then, some landowners get less rent, others are likely to get more.[3] But while some laborers get less wages, *other laborers do not get more*, except in the sense that they have the protection of the insurance and, therefore, the compensation in case of injury. The tendency would be, of course, in the sort of case we are discussing, for the reduced wages in the uninsured lines consequent on diminished demand, to divert some of the laborers into the insured lines, so making the burden general on all wage-earners and leaving the *relation* among wages in the various industries and trades about the same as before.

V

We have now seen that the higher prices of the goods produced in the industries or trades where compensation is required will, in case demand for the goods there produced is *inelastic*, cause a fall in the prices of other goods through the intermediation of a decreased demand consequent on a diminished ability to purchase them. We have next to see that the same result in the prices of

[1] See remarks near close of article.

[2] Receivers of interest on capital in the various lines of industry would temporarily be correspondingly affected. But as capital continually wears out and has to be replaced, interest rates in different lines tend toward equality.

[3] This does not mean that the prices in question rise more than is necessary to cover the premium. But if the rise is barely enough to do that in the case of goods produced on no-rent land or on the intensive margin, the owner of supramarginal land devoted to producing the same goods will have a larger money rent than before.

other goods may be brought about when the demand for the goods which have been raised in price is *elastic.* If the demand for these goods is elastic, then the higher prices must mean that considerably less of them will be purchased. In consequence, fewer persons can find employment in the production of them. The unemployable surplus of workers will then have to seek employment in other lines, thus lowering wages in the other lines, increasing the supply of other goods, and lowering the prices of these other goods. The redistribution of labor would tend, of course, to be such as to spread the lowering of wages over all lines of industry, leaving the lines having insurance in about the same relation to the others as before. For in the case we are assuming, wages in the lines having insurance cannot be much lower than before in relation to other wages if the lines having insurance are to remain supplied—though less supplied than before—with labor. And if, in these lines in which less labor is employed because of the insurance premiums, the marginal physical productivity of labor is raised, in other lines the marginal physical productivity of labor is likely to be somewhat lowered.

Here, again, it should be clear that the burden of the premiums required is not likely to fall in any appreciable degree elsewhere than on wages. Thus, it is not likely to fall upon rent. In the lines where prices fall the salable value of the marginal product of land may fall (if the falling prices are not, for landowners, offset by a greater physical marginal productivity of land).[1] But in the lines where prices rise the salable value of the marginal product of land may rise (if the rising prices are not offset by a smaller physical marginal productivity of land). And if higher prices diminish the number of men in some lines and so lower there the marginal productivity of land (while raising the marginal productivity of labor); conversely the increased number of men working in other lines may raise the marginal productivity of land in these other lines (while lowering that of labor).

The conclusion, then, is that the cost of workmen's insurance falls not upon consumers in general nor upon interest- nor rent-receivers but upon wage-earners. And wage-earners bear this

[1] Note remainder of paragraph.

loss in the form of lower wages rather than in the form of higher prices of goods. There is no intention to deny that workmen's compensation in industries the products of which are consumed not at all by wage-earners might be at the expense of others than wage-earners. Though some prices should rise and other prices fall, yet, if wage-earners were consumers only of the goods which fell, a decrease in their money wages would be no loss[1]—or not so much loss. Also, there is no intention to deny that efficiency may be decreased and output lessened in consequence of the shifting of labor from some lines into others, which the requirement of compensation in some lines might cause. And, finally, it is admitted that the diversion of labor may be from lines of relatively constant to lines of relatively decreasing returns from land or vice versa, so *increasing* in the one case or *decreasing* in the other the aggregate land rents received. Thus, to illustrate one possibility, suppose the industries where compensation is paid to be mining industries and suppose that the resulting higher prices of the products of mining decrease demand and cause fewer mines to be operated. If the difference between the marginal mines and the better ones is very great, the lack of demand for the marginal mines may lower royalties or rents in the mining field considerably; while the increased labor employed in other industries may not correspondingly raise other rents. Nevertheless, our general conclusion remains unchanged, viz., that the incidence of the charge for workers' insurance, imposed first on employers, is likely to rest for the most part on wage-earners, and that, *other things being equal*, it will entirely so rest.[2]

No consideration has been given in this article to the question whether compulsory workmen's insurance might have effects on population which would tend to make wages higher or lower in a succeeding generation. The incomes of wage-earners are, because

[1] Whether, if such a loss falls in part on interest-receivers, it may diminish saving, raise the rate of interest, and eventually decrease wages we need not here inquire.

[2] In the case of taxes imposed on selected commodities, the incidence is different. The taxed commodities rise in price. Other commodities fall slightly in price. Money incomes in general—not wages alone—tend to be somewhat lower. Similar qualifications must be made, however, for cases in which the incident industrial changes may increase or decrease rent.

of the effect on demand for labor of the required premiums, currently lower, and this might tend to decrease the number of children per family in cases where no injury is suffered by the insured parent. On the other hand, the insurance paid in cases of accident helps provide for the children of those who are injured or killed. In the absence of any clear indication that the future supply of labor would be less—or greater ?—because of compulsory workmen's insurance, it seems preferable to express no opinion.

Except that possible effects on population are not allowed for, the argument of the preceding pages relates frankly to the long-run situation. There is no intention to assert that the adoption of compulsory workmen's insurance *must immediately* decrease wages enough to cover the cost. The point is that the premiums required of employers enter as a new element into every wage contract, upset whatever condition of equilibrium between wages and product had been previously arrived at, and so affect demand for labor and tend toward reduced average wages.

But to say that the burden of the premium paid for workmen's insurance falls ultimately upon wage-earners as such, is not to question the desirability of such insurance. Insurance, as is well known, is a pooling of risks. All bear a little loss in order that none may suffer the extreme loss. The workmen who are not injured receive slightly lower wages in order that those who are injured—and their families—need not be reduced to poverty.

Furthermore, if such insurance is desirable, it is likewise desirable that the initial burden should fall upon employers. It would be impracticable to attempt collection from the sometimes hundreds or thousands of workers in a single plant. And besides, to put the burden initially on employers serves to fix responsibility upon them for the safety of the plants they control. For if insurance premiums are made to depend (as they ought to depend) upon the degree of safety maintained in each plant, then each employer has a motive for making his own plant as safe as possible. While it is true as a general proposition that the burden of the insurance premiums tends to rest upon wage-earners in lower wages, nevertheless the employer who has to pay a higher premium than others pay, because of the low degree of safety of his plant, cannot on

that account get workmen for lower wages than his rivals have to pay for the same work; and likewise the employer whose plant has so high a degree of safety that his premiums are especially low will not, on that account, have to pay wages above the level paid by other employers for work of equivalent quality.

It will be obvious to the reader that premiums charged in the same way to provide for health or old-age insurance will have effects similar to premiums charged to provide for insurance against accident, so far as their incidence is concerned. They too will be paid, in the last analysis, by wage-earners, regardless of their imposition in whole or in part, initially upon employers. Where insurance is provided from public funds, the incidence of the burden will depend upon the ultimate incidence of the taxes imposed to provide these funds.

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